CLAIMS

We claim:

1   1.   A method of constructing a model for estimating electrical

2 characteristics for an extraction sub problem, said method comprising:

3   identifying a set of physical measurements that define said extraction sub

4   problem;

5   selecting a set of training cases for said specific extraction sub problem, each of

6   said training cases including an associated set of said physical measurements;

7   solving said specific extraction sub problem for each of said training cases using

8   said associated set of physical measurements as an input to an accurate physics

9   based model to generate an associated output; and

10   training a machine-learning model with Bayesian inference using said associated

11   set of physical measurements and associated outputs as training data.

1   2.   The method as claimed in claim 1 wherein said electrical

2 characteristic comprises capacitance.

1   3.   The method as claimed in claim 1 wherein said electrical

2 characteristic comprises resistance.

1   4.   The method as claimed in claim 1 wherein said extraction sub

2   problem comprises a section of interconnect wire and nearby interconnect wiring within a

3   define halo.

1   5.   The method as claimed in claim 1 wherein said extraction sub

2   problem comprises a section of interconnect wiring.

1   6.   The method as claimed in claim 1 wherein one of said set of

2   physical parameters comprises a spacing between a pair of interconnect lines.

1   7.   The method as claimed in claim 1 wherein one of said set of

2   physical parameters comprises a wire width.

1   8.   The method as claimed in claim 1 wherein one of said set of

2   physical parameters comprises a wire length.

1   9.   The method as claimed in claim 1 wherein selecting a set of

2   training cases comprises randomly generating input parameters with a gamma probability

3   distribution.

1   10.   The method as claimed in claim 1 wherein said electrical

2   characteristic comprises delay.

1   11.   The method as claimed in claim 1 wherein said machine-learning

2   model comprises a neural network.